

Colorado Department of Transportation
Structure Inspection and Inventory Report (English Units)

Highway Number (ON) 5D: 470A

Mile Post (ON)11: 14.157 mi

Bridge Key: F-16-HY

Inspection Date: 3/6/2012

Sufficiency Rating: 81.1 Not Eligible

Rgn/Sectn 2E/2M:	68	Hist Signif 37:	5	UW Inspection Date 93B:	
Trans Region 2T:	02	Posting status 41:	A	SI Date 93C:	
County Code 3:	059	Service on/un 42A/B:	1 5	Bridge Cost 94:	\$ 0
JEFFERSON		Main Mat/Desgn 43A/B:	1 19	Roadway Cost 95:	\$ 0
Place Code 4:	00000	Appr Mat/Desgn 44A/B:	0 0	Total Cost 96:	\$ 0
non-city		Main Spans Unit 45:	2	Year of Cost Estimate 97:	
Rte.(On/Under)5A:	1	Approach Spans 46:	0	Brdr Brdg Code/% 98A/B:	
Signing Prefix 5B:	3	Horiz Clr 47:	38.0 ft	Border Bridge Number 99:	
Level of Service 5C:	1	Max Span 48:	14.0 ft	Defense Highway 100:	0
Directional Suffix 5E:	0	Str Length 49:	29.0 ft	Parallel Structure 101:	N
Feature Intersected 6:		Curb Wdth L/R 50A/B:	0.0 ft 0.0 ft	Direction of Traffic 102:	2
MASSEY DRAW/C470 TRAIL		Width Curb to Curb 51:	0.0 ft	Temporary Structure 103:	
Facility Carried 7:		Width Out to Out 52:	0.0 ft	Highway System 104:	1
SH 470 ML		Deck Area:	7,739.3 sq. ft	Fed Lands Hiway 105:	0
Alias Str No.8A:		Min Clr Ovr Brdg 53:	99.99	Year Reconstructed 106:	0000
		Min Undrclr Ref 54A:	N	Deck Type 107:	N
Prll Str No. 8P		Min Undrclr 54B:	0.0 ft	Wearing Surface 108A:	N
		Min Lat Clrnce Ref R 55A:	N	Membrane 108B:	N
Location 9:	328.05117409:	Min Lat Undrclr R 55B:	0.0 ft	Deck Protection 108C:	N
.75 MI E OF JCT SH 121		Min Lat Undrclr L 56:	0	Truck ADT 109:	4 %
Max Clr 10:	99.99	Deck 58:	N	Trk Net 110:	1
BaseHiway Net12:	1	Super 59:	N	Pier Protection 111:	#
IrsinvRout 13A:	000000470A	Sub 60:	N	NBIS Length 112:	Y
IrrsubRout No13B:	00	Channel/Protection 61:	8	Scour Critical 113:	8
Latitude 16:	39d 33' 31"	Culvert 62:	6	Scour Watch 113M:	
Longitude 17:	105d 04' 36"	Oprrtg Rtg Method 63:	3 LRFR Load &	Future ADT 114:	104,880
Range18A:	69 W	Operating Rating 64:	99.9	Year of Future ADT 115:	2028
Township18B:	69	Inv Rtg Method 65:	3	CDOT Str Type 120A:	CBC
Section18C:	2	Inventory Rating 66:	99.9	CDOT Constr Type 120B:	0.
Detour Length 19:	0.6 mi	Asph/Fill Thick 66T:	300 "in"	Inspection Indic 122A:	
Toll Facility 20:	3	Str. Evaluation 67:	6	Inspection Trip 122AA:	
Custodian 21:	1	Deck Geometry 68:	N	Scheduling Status 122B:	
Owner 22:	1	Undrclr Vert/Hor 69:	N	Maintenance Patrol 123:	26
Functional Class 26:	12	Posting 70:	5	Expansion Dev/Type124:	0
Year Built 27:	1968	Waterway Adequacy 7:	9	Brdg Rail Type/Mod 125A/B:	X 0 0
Lanes on 28A:	4	Approach Alignment 72:	8	Posting Trucks 129A/B/C:	0 0 0
Lanes Under 28B:	0	Type of Work 75A:		Str Rating Date 130:	8/24/2011
ADT 29:	69,000	Work Done By 75B:		Special Equip 133:	-1
Year of ADT 30:	2008	Length of Improvment 76:	0.0 ft	Vert Clr N/E 134A/B/C:	X 99.99 0.00
Design Load 31:	6	Insp Team Indicator 90B:	GREEN TEAM	Vert Clr S/W 135A/B/C:	X 99.99 0.00
Apr Rdwy Width 32:	76.0 ft	Inspector Name 90C:	BUTKOVICHJ	Vertical Clr Date:	1/1/1901
Median 33:	2	Frequency 91:	24 months	Weight Limit Color: 139:	0
Skew 34:	30.00 °	FC Frequency 92A:	-1	Str Billing Type:	U
Structure Flared 35:	0	UW Frequency 92B:	-1	Userkey 1 - System:	ONSYS
Sfty Rail 36a/b/c/d:	1 1 1 1	SI Frequency 92C:	-1	Userkey 7-Update Indic:	
Rail ht36h:	00 "in"	FC Inspection Date 93A:			

Inspector Name: BUTKOVICHJ

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Element Inspection Report

Elm/En	Description	Units	Total Qty	% in 1	CS 1	% in 2	CS 2	% in 3	CS 3	% in 4	CS 4	% in 5	CS 5
241/4	Concrete Culvert	(LF)	616	85 %	525	7 %	45	8 %	46	0 %	0	0 %	0
327/4	Culvert Wingwalls	(EA)	4	75 %	3	25 %	1	0 %	0	0 %	0	0 %	0
332/4	Timb Bridge Railing	(LF)	30	67 %	20	0 %	0	33 %	10	0 %	0	0 %	0
335/4	Culvert Headwalls	(EA)	2	100 %	2	0 %	0	0 %	0	0 %	0	0 %	0
361/1	Scour Smart Flag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
501/1	Channel Cond	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
504/1	BankCond	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0

Elem/Env	Description	Element Notes
241/4	Concrete Culvert	Cell #1 has 10 and Cell #2 has 14 longit. cracks with heavy leaking (active), rust stains, efflor., and stalactites in top slab. They have been sealed in the past with epoxy but most continue to leak, see 2002 and 2010 PHOTOS. The stalagmites of ice on the floor in cell #2 as pictured in 2010 PHOTO were not there in 2012. Bottom of top slabs have spalling with exposed rebar below left headwall, 1 foot x 6 feet and 1 foot x 3 feet in Cells 1 and 2, see 2012 PHOTO. Bottom slab of Cell #2 (pedestrian cell) has about 40 to 50 feet of moderate scaling below areas of leaking, possibly due to salt placed on icy conditions in winter months. Base of Wall #1 has 25 feet of spalling with exposed rebar and minor spall on right end of divider wall. Minor scour at inlet.
327/4	Culvert Wingwalls	Wings are open from 1 to 2 inches at tops and filler material is loose or coming out. Footing of #1 left wingwall is exposed for 4 ft in length x 9 inches in depth.
332/4	Timb Bridge Railing	Pedestrian timber rail mounted on top of north (left) headwall. A portion of the rail is missing, see 2010 PHOTOS.
335/4	Culvert Headwalls	Both have light vertical cracks over the divider wall.
361/1	Scour Smart Flag	Scour at upstream end of CBC exposing 8 inches of footing x 4 ft long of #1 left wingwall. Channel is also approx. 8 to 10 inches low in front of cell #1 at upstream end. (no undercutting at this time).
501/1	Channel Cond	Massey Draw. Good alignment. Gravel and small cobble bottom. Flow in Cell #1 and C470 bike path in Cell #2.
504/1	BankCond	Lined with willows, grass, weeds, and a few trees. Chatfield State park on right side, downstream end.

Maintenance Activity Summary

MMS Activity	Description	Recommended	Status	Target Year	Est Cost
356.01	Curb & RI	1/20/2010	-1	2011	500

Repair timber ped. rail on the north end of CBC.

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Maintenance Activity Summary

MMS Activity	Description	Recommended	Status	Target Year	Est Cost
398	Misc Br Wk	1/3/2002	-1	2003	500

When / if the lights and leaking crack gutters are installed for C470 bike trail, also install heat tape system in the gutters to prevent ice buildup. Install gutters below the active leaking cracks in the topslab of cell for the C470 trail.

358.03	Substr	3/6/2012	_	2014	500
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Place riprap at upstream end of CBC where the wing footing is exposed and channel is low in front of Cell #1.

Bridge Notes

Walls in #2 cell have been painted. Timber retaining wall above north (left) end of CBC is leaning 6 to 8 inches, see 2010 PHOTO.

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Inspection Notes

Time: 1:30	Temperature: 70 Degrees	Weather: Clear	Team leader: JWB	Inspector: J. Butkovich
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Scope:

☒ NBI: ☒ Element: ☐ Underwater: ☐ Fracture Critical: ☐ Other: **Type:** Regular NBI

Inspector: BUTKOVICHJ

Inspection Team:

Inspection Date: 03/06/2012

Inspector

Inspector